

REMARKS

Claims 101 and 139 have been canceled by the subject amendment without prejudice or disclaimer of the subject matter thereof.

Claims 80, 83, 94, 96, 97, 103, 104, 108, 112, 120, 123, 126, 133, 135, 136, 142, 146 and 150 have been amended.

Claims 80, 82 - 84, 86 - 94, 96 - 98, 100, 102 - 109, 111 - 120, 122 - 124, 126 - 133, 135 - 137, 140 - 147 and 149 - 156 are present in the subject application.

In the Office Action dated May 18, 2004, the Examiner has rejected claims 80, 82 - 84, 86 - 94, 96 - 98, 100, 102 - 109, 111 - 120, 122 - 124, 126 - 133, 135 - 137, 140 - 147 and 149 - 156 under 35 U.S.C. §103(a). Favorable reconsideration of the subject application is respectfully requested in view of the following remarks.

The Examiner has rejected claims 80, 82 - 84, 86 - 90, 92 - 94, 96 - 98, 100 - 104, 106 - 109, 111 - 116, 118 - 120, 122 - 124, 126 - 129, 131 - 133, 135 - 137, 139 - 142, 144 - 147, 149 - 153 and 155 - 156 under 35 U.S.C. §103(a) as being unpatentable over U.S. Patent No. 5,613,913 (Ikematsu et al.) in view of U.S. Patent No. 4,923,402 (Marshall et al.). Briefly, the present invention is directed toward a firearm training system providing a remote training capability for a user with an instructor located at a site remote from the location where the user performs training activities. The system may further enable joint training sessions with or competitions between shooters at different geographic locations. The system includes a training firearm that emits a laser signal in response to actuation of the firearm. A laser-detecting target detects the exact location the laser signal hits the target. The target is connected to a computer which reports laser hit information and keeps track of a sequence of laser hits fired by the competitor or trainee. The computer can be linked via a

communications network to similar firearm training systems at different geographic locations.

The Examiner takes the position that the Ikematsu et al. patent discloses all the features within the independent claims except for the feedback information being used to modify the subject's performance to enhance performance results. The Examiner further alleges that the Marshall et al. patent teaches this feature and that it would have been obvious to combine the teachings of the Ikematsu et al. and Marshall et al. patents to attain the claimed invention.

This rejection is respectfully traversed. Initially, the present invention is directed toward a firearm training system enabling training and/or competitions by users at different remote or geographic locations from each other and/or an instructor as discussed above. The remote firearm training systems communicate with each other over a network to enable interaction between users to facilitate joint training or competitions. In contrast, the Ikematsu et al. and Marshall et al. patents relate to gaming or training activities at a single location. In other words, those patents disclose gaming and training with local users or users at the same site.

Accordingly, and in order to expedite prosecution of the subject application, independent claims 80, 94, 108, 120, 133 and 146 have been amended to define various features of the present invention. In particular, independent claims 80 and 120 recite the features of: measuring performance of physical firearm operation by identifying coordinates of impact locations on a target of a laser beam emitted from the firearm in response to the firearm operation; an information system, at a second different remote location, in communication via a network with the activity processing system and accessible by an instructor; and providing feedback information to a subject including potential causes of shooting errors and information associated with modifying subject performance of firearm operation to enhance performance results and the subject physical skill level

with the subject at a location remote from the instructor.

Independent claims 94 and 133 recite the features of: a plurality of activity processing systems each at a different remote location and in communication to transfer information with each other via a network to facilitate joint training of plural subjects; measuring performance of physical firearm operation by identifying coordinates of impact locations on a target associated with a corresponding subject of a laser beam emitted from a corresponding firearm in response to firearm operation; and providing performance information of each subject and feedback information to a corresponding subject.

Independent claims 108 and 146 recite the features of: a plurality of activity processing systems each at a different remote location and in communication with each other via a network; measuring performance of physical firearm operation by identifying coordinates of impact locations on a target associated with a participant of a laser beam emitted from a corresponding firearm in response to firearm operation; each activity processing system communicating information associated with a corresponding participant to each other via the network; and providing performance information of each participant to a corresponding participant.

The Ikematsu et al. patent does not disclose, teach or suggest these features. Rather, the Ikematsu et al. patent discloses a method for developing attractions in a shooting game system with which players can exercise gun fights between the targets and players themselves (e.g., See Abstract). A room for a shooting game is partitioned into a plurality of rooms including an entrance room, battle stage rooms where gunfights with targets are played and an ending room to receive personal or team results (e.g., See Fig. 1 and Column 3, lines 16 - 27). Thus, the Ikematsu et al. patent discloses a single location or local users for the game system, as opposed to different remote

locations for a subject and/or activity measuring device and an instructor and/or information system in communication via a network to provide remote training as recited in claims 80 and 120, or activity processing systems to measure firearm operation at different remote locations and in communication with each other via a network to facilitate joint training or competition between remote users as recited in claims 94, 108, 133 and 146.

The Ikematsu et al. game system includes a host computer to control the system and a control box for each room. The control box for each room controls a subsystem in each room in accordance with commands from the host computer (e.g., See Column 3, lines 29 - 39). The respective control boxes transmit target control commands to control targets within the room. Each target attacks a player and includes a means for detecting bullet impacts and means for detecting player positions (e.g., See Column 3, lines 45 - 50). The target includes an infrared emitting unit to emit infrared light corresponding to a bullet and a light receiving unit for detecting infrared light shot by a player (e.g., See Fig. 3 and Column 4, lines 27 - 39). The target may further include a human body sensor to detect a player and attack when a player is in the target attack area (e.g., See Fig. 4 and Column 4, lines 53 - 58). The bullet hit and player position information are transmitted to the control box (e.g., See Column 3, lines 50 - 52).

Although the Ikematsu et al. patent discloses detection of bullet hits by the target, there is no disclosure, teaching or suggestion of identifying coordinates of those hits on the target as recited in each of the independent claims. In fact, the game is typically concerned with whether a target has been hit as opposed to the specific location of the hit. Further, the Ikematsu et al. targets interact with any of the game players that come into range, where results are provided to players at the end of a game. There is no disclosure, teaching or suggestion of activity processing systems to measure

firearm operation at different remote locations; the activity processing systems in communication with each other via a network to facilitate joint training or competition between remote users; and providing performance information about each subject or participant to the corresponding subjects at the remote locations as recited in independent claims 94, 108, 133 and 146.

In addition, the Ikematsu et al. patent is primarily concerned with arranging the targets in the room for a shooting game. In one embodiment, arrangement of the targets is entered into the control system to simulate a game with a proposed target configuration and confirm game quality (e.g., See Figs. 5 - 7; Column 5, lines 3 - 7 and Column 6, lines 14 - 16). There is no disclosure, teaching or suggestion of firearm training or competitions by remote users interacting over a network as recited in each of the independent claims or, for that matter, providing feedback information including potential causes of shooting errors and information modifying subject performance of firearm operation as recited in independent claims 80 and 120.

The Marshall et al. patent does not compensate for the deficiencies of the Ikematsu et al. patent. For example, each of the independent claims recites the features of measuring performance of firearm operation by identifying coordinates of impact locations on the target of a laser beam emitted by the firearm in response to firearm operation, while independent claims 80 and 120 further recite different remote locations for a subject and/or activity measuring device and instructor and/or information system. Independent claims 94, 108, 133 and 146 further recite activity processing systems at different remote locations in communication with each other via a network, the activity processing systems communicating with each other over a network, and providing performance information about each subject or participant to the corresponding subjects at the remote locations.

As discussed above, the Ikematsu et al. patent does not disclose, teach or suggest these

features. The Marshall et al. patent similarly does not disclose, teach or suggest these features. Rather, the Marshall et al. patent discloses a marksmanship trainer for use at a site by local users. The system includes a microcomputer, monitor, weapon and light pen. A digitized image is processed and controlled by the computer and presented on the monitor. The trainee handles the weapon in operational fashion to track the target and manipulate the trigger. Sensors monitor the trainee's breathing and trigger squeeze. The light pen is aligned with the sight of the weapon and senses the point of light traced by the raster scan on the monitor to create the display. The pen provides a pulse to the computer when the point of light is detected. In response, the computer reads values in counters that define the location on the screen of the pen placement (e.g., See Column 3, lines 28 - 47). Thus, the Marshall et al. system employs a light pen on the weapon to receive light from the target to determine weapon position, as opposed to measuring performance of firearm operation by identifying coordinates of impact locations on the target of a laser beam emitted by the firearm in response to firearm operation as recited in each of the independent claims.

Further, the computer of the Marshall et al. system compares the trainee's target tracking, breathing pattern and trigger manipulation to a preselected set of parameters that characterize the skilled marksman and provides aural/visual feedback to the trainee from the computerized expert instructor denoting specific corrective action (e.g., See Column 3, lines 45 - 56). Although the system may include an instructor station (e.g., See Column 4, line 8), there is no disclosure, teaching or suggestion of different remote locations for a subject and/or activity measuring device and an instructor and/or information system in communication via a network to provide remote training as recited in independent claims 80 and 120. In fact, the Marshall et al. patent is silent with respect to remote networking capability and, therefore, does not disclose, teach or suggest: activity processing

systems to measure firearm operation at different remote locations; the activity processing systems in communication with each other via a network to facilitate joint training or competition between remote users; and providing performance information about each subject or participant to the corresponding subjects at the remote locations as recited in independent claims 94, 108, 133 and 146.

Since the Ikematsu et al. and Marshall et al. patents do not disclose, teach or suggest, either alone or in combination, the features recited in independent claims 80, 94, 108, 120, 133 and 146 as discussed above, these claims are considered to be in condition for allowance.

Claims 82 - 84, 86 - 90, 92 - 93, 96 - 98, 100, 102 - 104, 106 - 107, 109, 111 - 116, 118 - 119, 122 - 124, 126 - 129, 131 - 132, 135 - 137, 140 - 142, 144 - 145, 147, 149 - 153 and 155 - 156 depend, either directly or indirectly, from independent claims 80, 94, 108, 120, 133 or 146 and include all the limitations of their parent claims. Claims 83, 96, 97, 103, 104, 112, 123, 126, 135, 136, 142 and 150 have been amended for consistency with their amended parent claims. These claims are considered to be in condition for allowance for substantially the same reasons discussed above in relation to their parent claims and for further limitations recited in the dependent claims.

The Examiner has rejected claims 91, 105, 117, 130, 143 and 154 under 35U.S.C. §103(a) as being unpatentable over U.S. Patent No. 5,613,913 (Ikematsu et al.) in view of U.S. Patent No. 4,923,402 (Marshall et al.) and further in view of U.S. Patent No. 5,890,906 (Macri et al.). Briefly, the present invention is directed toward a firearm training system providing a remote training capability for a user and enabling joint training sessions with or competitions between shooters at different geographic locations as described above.

The Examiner takes the position the combination of the Ikematsu et al. and Marshall et al. patents disclose all the features within these claims except for the identification module. The

Examiner further alleges that the Macri et al. patent teaches this feature and that it would have been obvious to combine the teachings of the Ikematsu et al., Marshall et al. and Macri et al. patents to attain the claimed invention.

This rejection is respectfully traversed. Initially, claims 91, 105, 117, 130, 143 and 154 depend, either directly or indirectly, from independent claims 80, 94, 108, 120, 133 or 146 and include all the limitations of their parent claims. As discussed above, the combination of the Ikematsu et al. and Marshall et al. patents does not disclose, teach or suggest: measuring performance of firearm operation by identifying coordinates of impact locations on the target of a laser beam emitted by the firearm in response to firearm operation as recited in each of the independent claims; different remote locations for a subject and/or activity measuring device and instructor and/or information system as recited in independent claims 80 and 120; and activity processing systems at different remote locations in communication with each other via a network, the activity processing systems communicating with each other over a network and providing performance information about each subject or participant to the corresponding subjects at the remote locations as recited in independent claims 94, 108, 133 and 146.

The Macri et al. patent does not compensate for the deficiencies of the Ikematsu et al. and Marshall et al. patents and similarly does not disclose, teach or suggest these features. Rather, the Macri et al. patent discloses an apparatus for instruction and simulated training and competitive play or entertainment in an activity. The apparatus includes a computer used to view and to control images of hockey players on a computer screen (e.g., See Abstract). An instructive or ideal computer generated image displays the preferred style, technique, posture, procedure, skills, drills, positions, maneuvers, tactics, strategies or plays of an activity, preferably hockey, that calls for using cognitive

and motor functions. The user manipulates a user controllable adopted computer generated image on another portion of the screen to cause the adopted image to simulate or proximate the preferred actions represented by the instructive or ideal image (e.g., See Column 2, lines 1 – 19; Column 5, lines 2 – 5 and 22 – 24). The Macri et al. patent further discloses that the system enables users to engage in simulated repetition and/or competition geared to either learning or entertainment within the economy of space used for a computer monitor and keyboard without actual imitative movement of an instructive figure and without the requirement to use actual tools, implements or equipment (e.g., See Column 2, line 62 to Column 3, line 3). Thus, the Macri et al. patent discloses a user manipulating a computer generated image performing an activity (preferably hockey) in accordance with the motions of an instructional or ideal computer generated image. There is no disclosure, teaching or suggestion of different remote locations for a subject and/or activity measuring device and an instructor and/or information system in communication via a network to provide remote firearm training as recited in independent claims 80 and 120; or activity processing systems to measure firearm operation at different remote locations; the activity processing systems in communication with each other via a network to facilitate joint firearm training or competition between remote users; and providing performance information about each subject or participant to the corresponding subjects at the remote locations as recited in independent claims 94, 108, 133 and 146.

Since the Ikematsu et al., Marshall et al. and Macri et al. patents do not disclose, teach or suggest, either alone or in combination, the features recited in claims 91, 105, 117, 130, 143 and 154 as discussed above, these claims are considered to be in condition for allowance.

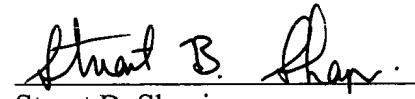
In addition to the foregoing, it would not be obvious to combine the teachings of the

Ikematsu et al., Marshall et al. and Macri et al. patents to attain the claimed invention. In particular, the Ikematsu et al. patent is directed toward arranging targets for a shooting game, while the Marshall et al. patent is directed toward a marksmanship trainer. The system of the Ikematsu et al. patent is purely for amusement or entertainment purposes. As such, the Ikematsu et al. system is not concerned with or equipped to handle realistic firearm training. Accordingly, there is no apparent reason or motivation to combine the Ikematsu et al. system with the Marshall et al. trainer to provide firearm training feedback.

The Macri et al. patent discloses a system enabling a user to manipulate a computer generated image to perform an activity in accordance with an ideal or instructional computer generated image as described above. The Macri et al. patent further discloses that the users of the apparatus engage in simulated repetition and/or competition within the space used for a computer monitor and keyboard and without the requirements for actual imitative movement of an instructive figure and without the use of tools, implements or equipment. Thus, the Macri et al. patent is directed toward a system for providing virtual training for an activity (without the use of any activity equipment) by user manipulation of a computer generated image, and is not concerned with and expressly teaches away from measuring physical performance of an activity by a subject and, for that matter, measuring performance of physical operation of a firearm by a subject or participant. Since the Ikematsu et al. and Marshall et al. patents disclose measurement of a physical activity, there is no apparent reason or motivation to combine the teachings of the Macri et al. patent with the combination of the Ikematsu et al. and Marshall et al. patents. Accordingly, the proposed combinations of the Ikematsu et al., Marshall et al. and Macri et al. patents do not render the claimed invention obvious.

The application, having been shown to overcome issues raised in the Office Action, is considered to be in condition for allowance and a Notice of Allowance is earnestly solicited.

Respectfully submitted,



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